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EXAMINER	
WENDELL, ANDREW	

ART UNIT	PAPER NUMBER
2618	

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/811,164	BEAUDIN ET AL.	
	Examiner	Art Unit	
	Andrew Wendell	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 6-7, 11-13, 16-18, 21-22, 26-28, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuerter (US Pat# 6,125,109) in view of Katz (US Pat# 7,069,051) and further in view of Yamamoto (US Pat Pub# 2003/0148747).

Regarding claim 1, method claim 1 is rejected for the same reason as apparatus claim 16 since the recited elements would perform the claimed steps.

Regarding claim 2, method claim 2 is rejected for the same reason as apparatus claim 17 since the recited elements would perform the claimed steps.

Regarding claim 3, method claim 3 is rejected for the same reason as apparatus claim 18 since the recited elements would perform the claimed steps.

Regarding claim 6, method claim 6 is rejected for the same reason as apparatus claim 21 since the recited elements would perform the claimed steps.

Regarding claim 7, method claim 7 is rejected for the same reason as apparatus claim 22 since the recited elements would perform the claimed steps.

Regarding claim 11, method claim 11 is rejected for the same reason as apparatus claim 26 since the recited elements would perform the claimed steps.

Regarding claim 12, method claim 12 is rejected for the same reason as apparatus claim 27 since the recited elements would perform the claimed steps.

Regarding claim 13, method claim 13 is rejected for the same reason as apparatus claim 28 since the recited elements would perform the claimed steps.

Regarding claim 16, Fuerter's delay combiner system for CDMA teaches a) a first input 32 (Fig. 2) adapted to receive a first receive signal centered about a first center frequency from a first antenna 16a (Fig. 2); b) a second input 32 (Fig. 2) adapted to receive a second receive signal centered about the first center frequency from a second antenna 16n (Fig. 2); c) first translation circuitry 36 (Demodulators, Fig. 2) adapted to translate the first receive signal from the first antenna to being centered about a second center frequency; and d) combining circuitry 38 (Fig. 2) adapted to combine the first receive signal 16a (Fig. 2) centered about the second center frequency and the second receive signal 16n (Fig. 2) to form a composite signal 40 (Fig. 2), which is sent to base housing electronics over a feeder cable 44 (Fig. 2). Fuerter fails to teach a first translation circuitry and a base housing over a feeder cable.

Fuerter teaches demodulators 36 (Fig. 2) which could translate the signal but it is unclear about the details of the demodulator. Katz's data transmission system teaches a) a first input 111 (Fig. 2) adapted to receive a first receive signal centered about a first center frequency from a first antenna 140 (Fig. 2); b) a second input 111 (Fig. 2) adapted to receive a second receive signal centered about the first center frequency from a second antenna 141 (Fig. 2); c) first translation circuitry 112 and 113 (Fig. 2, going from RF signal to an IF signal broadband to narrowband) adapted to translate

the first receive signal from the first antenna to being centered about a second center frequency (Col. 4 lines 58-63).

Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art at the time the invention was made to incorporate a first translation circuitry as taught by Katz into Fuerter's delay combiner system for CDMA in order to improve efficiency (Col. 2 lines 19-27).

Both Fuerter and Katz fail to teach a base housing over a feeder cable.

Yamamoto's radio base station teaches a composite signal which is sent to base housing 14 (Fig. 3) electronics over a feeder cable 13 (Fig. 3).

Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art at the time the invention was made to incorporate a base housing over a feeder cable as taught by Yamamoto into a first translation circuitry as taught by Katz into Fuerter's delay combiner system for CDMA in order to minimize error of a received signal (Sections 0035-0037).

Regarding claim 17, Fuerter further teaches wherein the first receive signal 16a (Fig. 2) centered about the second center frequency is combined 38 (Fig. 2) with the second receive signal 16n (Fig. 2) centered about the first center frequency to form the composite signal (Fig. 2).

Regarding claim 18, Fuerter further teaches wherein the first center frequency and the second center frequency are sufficiently spread to minimize interference 36 (Rake Fingers, Fig. 2) between the first 16a (Fig. 2) and second 16n (Fig. 2) receive signals in the composite signal.

Regarding claim 21, Fuerter further teaches wherein the second antenna is a main antenna also used to transmit signals centered about the first center frequency, and the first antenna is a diversity antenna associated with the second antenna, the base station electronics further comprising circuitry adapted to transmit a transmit signal via the main antenna (Fig. 7).

Regarding claim 22, Katz further teaches wherein a plurality of receive signals, including the second receive signal 141 (Fig. 2), are received and translated 112 and 113 (Fig. 2, going from RF signal to an IF signal and broadband to narrowband) to being centered about different center frequencies (can vary IF signal through the oscillator and mixer).

Regarding claim 26, Fuerter further teaches wherein the first and second receive signals correspond to a cellular signal transmitted from a cellular communication device (Col. 2 lines 50-51).

Regarding claim 27, Fuerter further teaches wherein the first and second antennas are associated with one of a plurality of sectors for the base station environment 39 (Fig. 2).

Regarding claim 28, Yamamoto further teaches wherein each sector uses one feeder cable 13 (Fig. 3) between the masthead 12 (Fig. 3) and the base housing 14 (Fig. 3).

Regarding claim 31, system claim 31 is rejected for the same reason as apparatus claim 16 since the recited elements would perform the claimed steps.

3. Claims 4-5, 14-15, 19-20, and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuerter (US Pat# 6,125,109) in view of Katz (US Pat# 7,069,051) further in view of Yamamoto (US Pat Pub# 2003/0148747) and further in view of Millman (US Pat# 6,657,978).

Regarding claim 4, method claim 4 is rejected for the same reason as apparatus claim 19 since the recited elements would perform the claimed steps.

Regarding claim 5, method claim 5 is rejected for the same reason as apparatus claim 20 since the recited elements would perform the claimed steps.

Regarding claim 19, Fuerter's delay combiner system for CDMA in view of Katz's data transmission system and further in view of Yamamoto's radio base station teaches the limitations in claim 16. Fuerter, Katz, and Yamamoto fail to teach a third center frequency.

Regarding claim 14, method claim 14 is rejected for the same reason as apparatus claim 29 since the recited elements would perform the claimed steps.

Regarding claim 15, method claim 15 is rejected for the same reason as apparatus claim 30 since the recited elements would perform the claimed steps.

Millman's network further teaches a second translation circuitry adapted to translate the second receive signal from the second antenna to being centered about a third center frequency, wherein the first receive signal centered about the second center frequency is combined with the second receive signal centered about the third center frequency to form the composite signal (Col. 9 line 61-Col. 10 line 55).

Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art at the time the invention was made to incorporate a third center frequency as taught by Millman into a base housing over a feeder cable as taught by Yamamoto into a first translation circuitry as taught by Katz into Fuerter's delay combiner system for CDMA in order to increase efficiency (Col. 2 lines 25-29 and Col. 2 lines 32-37).

Regarding claim 20, Fuerter further teaches wherein the second center frequency and the third center frequency are sufficiently spread to minimize interference 36 (Rake Fingers, Fig. 2) between the first 16a (Fig. 2) and second 16n (Fig. 2) receive signals in the composite signal.

Regarding claim 29, Millman further teaches wherein the first center frequency is associated with a first cellular band and a fourth center frequency (have the possibility of having a fourth center frequency) is associated a second cellular band; a third receive signal centered about a third center frequency is received via the first input from the first antenna; a fourth receive signal centered about the third center frequency is received via the second input from the second antenna, the base station electronics in the masthead further comprising second translation circuitry adapted to translate the third receive signal from the first antenna to being centered about a fourth center frequency (Col. 2 lines 25-29 and Col. 2 lines 32-37).

Regarding claim 30, Millman further teaches third translation circuitry adapted to translate the fourth receive signal from the second antenna to being centered about the fourth center frequency, wherein the third receive signal centered about the fourth

center frequency is combined with the fourth receive signal centered about the fourth center frequency to form at least part of the composite signal (Col. 2 lines 25-29 and Col. 2 lines 32-37).

4. Claims 8-9 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuerter (US Pat# 6,125,109) in view of Katz (US Pat# 7,069,051) further in view of Yamamoto (US Pat Pub# 2003/0148747) and further in view of Shapira et al. (US Pat Pub# 2003/0109283).

Regarding claim 8, method claim 8 is rejected for the same reason as apparatus claim 23 since the recited elements would perform the claimed steps.

Regarding claim 9, method claim 9 is rejected for the same reason as apparatus claim 24 since the recited elements would perform the claimed steps.

Regarding claim 23, Fuerter's delay combiner system for CDMA in view of Katz's data transmission system and further in view of Yamamoto's radio base station teaches the limitations in claim 16. Fuerter, Katz, and Yamamoto fail to teach transceiver circuitry.

Shapira's cellular base station augmentation system teaches a) transceiver circuitry 10a and 15a (Fig. 1); and b) separation circuitry 15a (Fig. 1) adapted to separate the first and second receive signals from the composite signal in the base station electronics, wherein the first and second receive signals are provided to transceiver circuitry (Fig. 1).

Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art at the time the invention was made to incorporate transceiver

circuitry as taught by Shapira into a base housing over a feeder cable as taught by Yamamoto into a first translation circuitry as taught by Katz into Fuerter's delay combiner system for CDMA in order to improve transmit and receive performance (Section 0010).

Regarding claim 24, Shapira further teaches second translation circuitry adapted to translate the first receive signal to being centered about the first center frequency prior to providing the first receive signal to the transceiver circuitry (Fig. 1).

5. Claims 10 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuerter (US Pat# 6,125,109) in view of Katz (US Pat# 7,069,051) further in view of Yamamoto (US Pat Pub# 2003/0148747) further in view of Shapira et al. (US Pat Pub# 2003/0109283) and further in view of Millman (US Pat# 6,657,978).

Regarding claim 10, method claim 10 is rejected for the same reason as apparatus claim 25 since the recited elements would perform the claimed steps.

Regarding claim 25, Fuerter's delay combiner system for CDMA in view of Katz's data transmission system further in view of Yamamoto's radio base station and further in view of Shapira's cellular base station augmentation system teaches the limitations in claim 16. Fuerter, Katz, Shapira, and Yamamoto fail to teach third translation circuitry.

Millman's network further teacheswherein the second receive signal is translated to a third center frequency before being combined with the first receive signal to form the composite signal, and further comprising third translation circuitry adapted to translate the second receive signal to being centered about the first center frequency

prior to providing the second receive signal to the transceiver circuitry (Col. 9 line 61-Col. 10 line 55).

Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art at the time the invention was made to incorporate a third translation circuitry as taught by Millman into transceiver circuitry as taught by Shapira into a base housing over a feeder cable as taught by Yamamoto into a first translation circuitry as taught by Katz into Fuerter's delay combiner system for CDMA in order to increase efficiency (Col. 2 lines 25-29 and Col. 2 lines 32-37).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Wendell whose telephone number is 571-272-0557. The examiner can normally be reached on 7:30-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrew Wendell

Andrew Wendell
Examiner
Art Unit 2618

10/11/2006

10/16/06

CUOCHIEN B. VUONG
PRIMARY EXAMINER